

GP-303288

ION CONDUCTIVE MEMBRANE MADE FROM A BLOCK COPOLYMER AND METHODS OF MAKING A BLOCK COPOLYER

ABSTRACT OF THE DISCLOSURE

A block copolymer for use as a solid polymer electrolyte, said block copolymer having at least first and second segments, the first segments being hydrophilic segments provided with acidic substituents for proton transport and the second segments being hydrophobic segments having substantially no acidic substituents and serving for the mechanical integrity of the solid polymer electrolyte. Also described and claimed are an ion-conductive membrane made from block copolymers of the aforementioned kind as well as methods of preparing such block copolymers and membranes based thereon. The membranes have improved proton conductivity and improved mechanical properties in the presence of water making them particularly suitable for use in fuel cells.